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603 Category #?

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Personal Attention

Mr. Joel Golumbek
HWCS Chief, RCRA Compliance Branch
Division of Enforcement and Compliance Assistance
United States Environmental Protection Agency
Region 2
290 Broadway
New York, NY 10007-1866

November 10, 2003

Dear Mr. Golumbek:

Response to EPA August 7, 2003 Letter
RCRA Permit No. PRD980594709
Municipality of Ponce and BFI of Ponce, Inc.

On behalf of the Municipality of Ponce and BFI of Ponce, Inc., Herst & Associates, Inc. is submitting a response to items noted in a letter dated August 7, 2003 from Mr. Joel Golumbek of the United States Environmental Protection Agency (EPA) addressed to Mr. Eric Mead. The August 7, 2003 letter was generated based on EPA's comprehensive monitoring and evaluation (CME) inspection of the groundwater compliance monitoring system at the Ponce Landfill on May 28, 2003 and May 29, 2003.

The August 7, 2003 EPA letter listed five comments summarizing actions to be taken by the site, as iterated below.

Comment #1: *Promptly conduct an assessment of the adequacy of the existing groundwater monitoring system for the entire landfill; propose the re-location of wells as required; install new wells as necessary, and state the reasons for the selection of the proposed well locations. Proposed well locations must be shown in an up-dated site map. Well design information needs to be submitted as well. The groundwater compliance monitoring system must adequately monitor both aquifers located under the landfill. An EPA Publication, "RCRA Ground-Water Monitoring Technical Enforcement Guidance Document", dated July 1987 or later edition, may be used as a source of information for the assessment.*

Response: The existing groundwater monitoring system was reviewed at the site. Extensive site characterization of the hydrogeology was performed by Golder Associates during the permitting process to define the groundwater monitoring system. Herst & Associates, Inc. reviewed the hydrogeologic information compiled by Golder & Associates, the groundwater quality data available since initiation of monitoring in 1991, and the potentiometric surface maps available over the last five years. The hydrogeologic data and potentiometric surface maps are available in Attachment 1 of this submittal. The extensive site characterization combined with review of data collected since the effective date of the RCRA Post-Closure Permit (November 12, 1991) provided the framework for the enclosed minor updates to provide the most adequate groundwater monitoring program.

Monitoring wells GW-2 and GW-3 were not able to be sampled during the May 2003 event. Well GW-2 had an obstruction that would not allow the installation of a pump to allow groundwater

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sampling, and GW-3 had been damaged during landfill operations. Well GW-2 is currently having maintenance performed to allow proper samples to be collected during future events. Well GW-3 is proposed to be plugged and abandoned in the near future and replaced at a more hydraulically downgradient location as proposed on Figure 1 (GW-3R). Upon EPA authorization, the site intends to install replacement well GW-3R in early 2004 prior to the next sampling event.

Two groundwater zones are monitored at the Ponce Landfill: the Ponce Formation and the Juana Diaz Formation. Monitoring wells MW-2, MW-3, MW-4, and MW-8 (Subtitle D wells) are installed in the Juana Diaz Formation. Monitoring wells GW-1, GW-2, GW-3, GW-4, GW-7, and GW-8 (Subtitle C wells) are installed in the Ponce Formation. Wells GW-1, GW-4, and GW-5 was intended only to collect water level information only from the Ponce Formation, but after review of the attached boring log and available groundwater quality for GW-5, it appears that GW-5 actually monitors the Juana Diaz Formation. Well GW-5 is not required to be sampled, but will continue to be measured for water levels as specified in the RCRA Post-Closure Permit.

The original permit noted GW-7 as the single upgradient well, however it appears this decision was based on limited water level data at that time. After review of the past five years of potentiometric surface maps for the Ponce Formation, it appears the groundwater flow direction has changed and it would now be more appropriate to utilize GW-2 as the upgradient well for statistical analyses for the Ponce Formation. GW-7 is currently a side-gradient to downgradient monitoring well. Included in Attachment 2 is an updated Permit page indicating GW-2 is to be used as the upgradient well for calculation of background groundwater quality.

The site proposes to concurrently submit copies of the groundwater reports for the existing Subtitle D program monitoring wells and the proposed Subtitle C monitoring wells to the EPA and the Puerto Rico Environmental Quality Board (PREQB). As shown on Figure 1, the Subtitle D wells, labeled with "MW-" prefix, provide coverage of the remaining portion of the site. The concurrent reporting of the Juana Diaz Formation wells to the EPA and PREQB will provide coverage of the two uppermost aquifers beneath the entire site. Included in Attachment 1 are copies of hydrogeologic cross-sections compiled by Golder Associates that illustrate the two zones monitored.

In addition, the site proposes to conduct inter-well prediction limit statistical analyses for each groundwater program. The Subtitle C program statistical analyses will be performed in similar fashion to the Subtitle D program. The Subtitle D program has historically utilized inter-well prediction limits, which are considered a powerful tool for ground water statistical analysis due to their inherent low false negative and false positive rates utilizing confirmatory resampling, if necessary. The statistical method originally proposed in the Subtitle C Permit (Permit Attachment IV-5) was also prediction limits, however according to Module V.F.2.(a), if the background data set contains at least one detection for a given parameter, then a separate formula was recommended to be applied. Due to the presence of several years of groundwater quality data collected since initiation of the Subtitle C Permit, it would be more appropriate to conduct inter-well prediction limits on all samples and not just in certain scenarios, as the original permit cited. The data collected from the upgradient well (GW-2) in the Ponce Formation will be utilized to compile statistical limits of which the data collected from downgradient wells (GW-3R, GW-7, and GW-8) in the Ponce Formation will be compared to. Similarly, the data collected from the upgradient well in the Juana Diaz Formation (MW-2) will be utilized to compile statistical limits of which the data collected from downgradient wells in the Juana Diaz Formation (MW-3, MW-4, and MW-8) will be compared to. Included in Attachment 3 are updated Permit pages indicating the use of inter-well prediction limits as the statistical method of choice for the Subtitle C program and a detailed description of the inter-well prediction limit procedures.

The site is also proposing to sample the same parameter list for the Subtitle C and Subtitle D programs. The list will include a standard Subtitle D program under 40 CFR, Appendix I to Part 258, which includes fifteen heavy metals (analyzed as total) and forty-seven volatile organic compounds (VOCs). In the past, semi-volatile organic compounds (SVOCs) and cyanide were sampled in the Subtitle C wells, but neither SVOCs nor cyanide has had a confirmed detection at the site. The Subtitle C wells have been routinely sampled for both total metals and dissolved metals, and will continued to be monitored for both total and dissolved metals. It is proposed that Subtitle C and Subtitle D wells will be sampled semi-annually during the same months, April and October. Included in Attachment 4 is updated Permit page indicating the groundwater parameter list to be sampled for the Subtitle C program.

Boring logs and well construction diagrams are attached for each of the proposed groundwater monitoring wells in the Subtitle C program and for the existing Subtitle D program. Well GW-3R logs will be provided upon installation.

Comment #2: *Propose an alternative location for groundwater compliance monitoring well #3. This well must be relocated; the current location of the well does not meet the requirement of a compliance monitoring well, and the well is currently in poor condition. The criteria for the selection of the new location must be stated.*

Response: As noted above, well GW-3 is proposed to be replaced (with GW-3R) in a location between GW-2 and GW-8 slightly further south than the original location (see Figure 1). This new location will provide more downgradient coverage for the site. Existing well GW-2 will continue to provide upgradient data in the Ponce Formation.

Comment #3: *Document the plugging and abandonment method for compliance groundwater monitoring well #3, as well as for any other well that is proposed to be re-located; a notification-report must be submitted to EPA in compliance with Attachment IV-3 of the Post Closure Permit.*

Response: Upon final plugging and abandonment of GW-3, a notification report will be submitted to EPA in compliance with Attachment IV-3 of the Post Closure Permit.

Comment #4: *Specify the use of monitoring well identified as MW-5; please provide additional information on any hydrogeological evaluation made at this well.*

Response: The site does not have a well labeled MW-5; it is believed the comment refers to existing well GW-5. In accordance with Module V, Section B of the Post Closure Permit, only wells GW-2, GW-3, GW-7, and GW-8 are in the sampling program. Wells GW-1, GW-4, and GW-5 are not included in the sampling program, but are utilized for water levels only to aid in determining groundwater surface elevations at the site. Extensive site characterization of the hydrogeology was performed by Golder Associates during the permitting process to define the groundwater monitoring system. Herst & Associates, Inc. reviewed the hydrogeologic information compiled by Golder & Associates, the groundwater quality data available for GW-5, and the potentiometric surface maps available over the last five years. The hydrogeologic data and potentiometric surface maps are available in Attachment 1 of this submittal. After review of the boring log and available groundwater quality for GW-5, it appears that GW-5 may monitor the Juana Diaz Formation and not the Ponce Formation. Well GW-5 will continue to have water levels collected as required, and will not be added to the list of groundwater samples required to be collected at this time.

Comment #5: *Submit a copy of the amended pages of the Groundwater Monitoring Sampling Plan, introducing the replacements of the new bladder pumps, and the use of a new electronic sampling equipment, to the EPA.*

Response: Included in Attachment 5 are amended pages of the Groundwater Monitoring Sampling Plan that describe the new bladder pumps and sampling equipment/procedures utilized at the site. The amended pages will replace Section 7.0, 7.1, and 7.2 for Attachment IV-4 of the RCRA Post-Closure Permit. Also attached are the updated statistical analysis methods and monitoring parameter list, as noted above.

The site will not proceed to perform any monitoring program modifications until written approval is received from the EPA.

Should you have any questions or concerns, please contact us at your earliest convenience.

Sincerely,

HERST & ASSOCIATES, INC.

Steve Jett
Senior Hydrogeologist

Ward Herst
Managing Director

Attachments: *Figure 1 – Well Location & Potentiometric Surface Map*
Attachment 1: Boring Logs, Monitoring Well Construction Diagrams, Potentiometric Surface Maps, & Cross-Sections
Attachment 2: Amended Pages for the Background Well Designation
Attachment 3: Amended Pages for Statistical Analysis Methods
Attachment 4: Amended Pages for Groundwater Sampling Parameter List
Attachment 5: Amended Pages for the Groundwater Monitoring Sampling Plan

cc: *Mr. David Garcia-Abrines*
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